

NRMRL QAPP REQUIREMENTS FOR MEASUREMENT PROJECTS

GENERAL REQUIREMENTS: Include cover page, distribution list, approvals, and page numbers.

0. COVER PAGE

Include the Division/Branch, project title, revision number, EPA technical lead, QA category, organization responsible for QAPP preparation, and date.

1. PROJECT DESCRIPTION AND OBJECTIVES

- 1.1 Describe the process and/or environmental system to be evaluated.
- 1.2 State the purpose of the project and list specific project objective(s).

2. ORGANIZATION AND RESPONSIBILITIES

- 2.1 Identify all project personnel, including QA, and related responsibilities for each participating organization, as well as their relationship to other project participants.
- 2.2 Include a project schedule that includes key milestones.

3. SCIENTIFIC APPROACH

- 3.1 Describe the sampling and/or experimental design that will be used to generate the data needed to evaluate the projective objective(s). A description of the design should include the types and numbers of samples (including QC and reserve samples), the design of the sampling network, sample locations and frequencies, and the rationale for the design.
- 3.2 Identify the process measurements (e.g., flow rate, temperature) and specific target analyte(s) for each sample type.
- 3.3 Describe the general approach and the test conditions for each experimental phase.

4. SAMPLING PROCEDURES

- 4.1 Describe any known site-specific factors that may affect sampling procedures as well as all site preparation (e.g., sampling device installation, sampling port modifications, achievement of steady-state) needed prior to sampling.
- 4.2 Describe or reference each sampling procedure (including a list of equipment needed and the calibration of this equipment as appropriate) to be used. Include procedures for homogenizing, compositing, or splitting of samples, as applicable.
- 4.3 Provide a list of sample containers, sample quantities to be collected, and the sample amount required for each analysis, including QC sample analysis.
- 4.4 Specify sample preservation requirements (e.g., refrigeration, acidification, etc.) and holding times.
- 4.5 Describe the method for uniquely numbering each sample.

- 4.6 Describe procedures for packing and shipping samples, including procedures to avoid cross-contamination, and provisions for maintaining chain-of-custody (e.g., custody seals and records), as applicable.

5. MEASUREMENT PROCEDURES

- 5.1. Describe in detail or reference each process measurement or analytical method to be used. If applicable, identify modifications to EPA-approved or similarly validated methods.
- 5.2. If not provided in Section 5.1 or the referenced method, include specific calibration procedures, including linearity checks and initial and continuing calibration checks.

6. QUALITY METRICS (QA/QC CHECKS)

- 6.1. For each process measurement and analytical method, identify the required QC checks (e.g., blanks, control samples, duplicates, matrix spikes, surrogates), the frequencies for performing these checks, associated acceptance criteria, and corrective actions to be performed if acceptance criteria are not met.
- 6.2. Any additional project-specific QA objectives (e.g., completeness, mass balance) shall be presented, including acceptance criteria.

7. DATA ANALYSIS, INTERPRETATION, AND MANAGEMENT

- 7.1 Identify the data reporting requirements, including data reduction procedures specific to the project and applicable calculations and equations.
- 7.2 Describe data validation procedures used to ensure the reporting of accurate project data.
- 7.3 Describe how the data will be summarized or analyzed (e.g., qualitative analysis, descriptive or inferential statistics) to meet the project objective(s).
 - 7.3.1 If descriptive statistics are proposed, state what tables, plots, and/or statistics (e.g., mean, median, standard error, minimum and maximum values) will be used to summarize the data.
 - 7.3.2 If an inferential method is proposed, indicate whether the method will be a hypothesis test, confidence interval, or confidence limit and describe how the method will be performed.
- 7.4 Describe data storage requirements for both hard copy and electronic data.

8. REPORTING

- 8.1 List and describe the deliverables expected from each project participant responsible for field and/or analytical activities.
- 8.2 Specify the expected final product(s) that will be prepared for the project (e.g., journal article, final report).

9. REFERENCES

Provide references either in the body of the text as footnotes or in a separate section.